SEQUENCE LISTING

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<120> COMPOUNDS, COMPOSITIONS AND METHODS FOR THE TREATMENT OF DISEASES CHARACTERIZED BY A-33 RELATED ANTIGENS

<130> 39780-1216R1C1D5

<140> US 10/785,607
<141> 2004-02-24

<150> US 09/953,499
<151> 2001-09-14

<150> US 09/254,465
<151> 1999-03-05

<150> PCT/US98/24855
<151> 1998-11-20

<150> PCT/US98/19437
<151> 1998-09-17

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        35                  40                  45
Ser Cys Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe
    50                  55                  60
Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr
65                  70                  75                  80
Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe
                85                  90                  95
Lys Ser Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser
            100                 105                 110
Glu Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val
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Pro Ser Glu Tyr Thr Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn
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Pro Lys Ser Thr Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro
            180                 185                 190
Thr Thr Gly Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly
        195                 200                 205
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    210                 215                 220
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225                 230                 235                 240
Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly
                245                 250                 255
Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly
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        275                 280                 285
Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
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<212> PRT
<213> Homo sapiens

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        35                  40                  45
Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg Gly Ser Asp Pro
    50                  55                  60
Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp His Ile Gln Gln Ala
65                  70                  75                  80
Lys Tyr Gln Gly Arg Leu His Val Ser His Lys Val Pro Gly Asp Val
                85                  90                  95
Ser Leu Gln Leu Ser Thr Leu Glu Met Asp Asp Arg Ser His Tyr Thr
            100                 105                 110
Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Val Arg Asp
        115                 120                 125
Lys Ile Thr Glu Leu Arg Val Gln Lys Leu Ser Val Ser Lys Pro Thr
    130                 135                 140
Val Thr Thr Gly Ser Gly Tyr Gly Phe Thr Val Pro Gln Gly Met Arg
145                 150                 155                 160
Ile Ser Leu Gln Cys Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile
                165                 170                 175
Trp Tyr Lys Gln Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr
            180                 185                 190
Leu Ser Thr Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser
        195                 200                 205
Tyr Phe Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp
    210                 215                 220
Ile Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys
225                 230                 235                 240
Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser Thr
                245                 250                 255
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Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr Leu Gly
            260                 265                 270
Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe Ala Ile Ile
        275                 280                 285
Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr Met Ala Tyr Ile
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<210> 3
<211> 390
<212> DNA
<213> Artificial Sequence

<220>
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gcttgtgcct ccatccaagc ctacagttaa catcccctcc tctgccacca ttgggaaccg 180
ggcagtgctg acatgctcag aacaagatgg ttccccacct tctgaataca cctggttcaa 240
agatgggata gtgatgccta cgaatcccaa aagcacccgt gccttcagca actcttccta 300
tgtcctgaat cccacaacag gagagctggt ctttgatccc ctgtcagcct ctgatactgg 360
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<210> 4
<211> 726
<212> DNA
<213> Artificial Sequence

<220>
<223> Consensus DNA Sequence

<400> 4

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agactcgttt gctataataa caagatcaca gcttcctatg aggaccgggt gaccttcttg 360
ccaactggta tcaccttcaa gtccgtgaca cgggaagaca ctgggacata cacttgtatg 420
gtctctgagg aaggcggcaa cagctatggg gaggtcaagg tcaagctcat cgtgcttgtg 480
cctccatcca agcctacagt taacatcccc tcctctgcca ccattgggaa ccgggcagtg 540
ctgacatgct cagaacaaga tggttcccca ccttctgaat acacctggtt caaagatggg 600
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<210> 5
<211> 1503
<212> DNA
<213> Artificial Sequence

<220>
<223> Consensus DNA Sequence

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gactcctgat ggcaaccaag tcgtgagaga taagattact gagctccgtg tccagaaact 180
ctctgtctcc aagcccacag tgacaactgg cagcggttat ggcttcacgg tgccccaggg 240
aatgaggatt agccttcaat gccagggttc ggggttctcc tcccatcagt tatatttggt 300
ataagcaaca gactaataac cagggaaccc atcaaagtag caaccctaag taccttactc 360
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aagaccaaga ctgaggcacc tacaaccatg acatacccct tgaaagcaac atctacagtg 540
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ccaggaaaga gcctgcctgt ctttgccatc atcctcatca tctccttgtg ctgtatggtg 660
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<210> 6
<211> 319
<212> PRT
<213> Homo sapiens

<400> 6
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Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro Gln Asp Val Leu Arg
            20   25   30
Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys Thr Tyr His Thr Ser
        35   40   45
Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp Lys Leu Leu Leu Thr
    50   55   60
His Thr Glu Arg Val Val Ile Trp Pro Phe Ser Asn Lys Asn Tyr Ile
65   70   75   80
His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile Ser Asn Asn Ala Glu
                85   90   95
Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu Thr Met Ala Asp Asn
            100   105   110
Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser Asp Leu Glu Gly Asn
        115   120   125
Thr Lys Ser Arg Val Arg Leu Leu Val Leu Val Pro Pro Ser Lys Pro
    130   135   140
Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly Asn Asn Ile Gln Leu
145   150   155   160
Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro Gln Tyr Ser Trp Lys
                165   170   175
Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro Ala Ser
            180   185   190
Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser Gly Tyr
        195   200   205

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Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe Cys Asn Ile
    210                 215                 220
Thr Val Ala Val Arg Ser Pro Ser Met Asn Val Ala Leu Tyr Val Gly
225                 230                 235                 240
Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile Ile Gly Ile Ile Ile
                245                 250                 255
Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn Thr Glu Asp Lys Glu
            260                 265                 270
Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu Pro Pro Glu Gln Leu
        275                 280                 285
Arg Glu Leu Ser Arg Glu Arg Glu Glu Glu Asp Asp Tyr Arg Gln Glu
    290                 295                 300
Glu Gln Arg Ser Thr Gly Arg Glu Ser Pro Asp His Leu Asp Gln
305                 310                 315
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<210> 7
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 7

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catcctggaa gtgccagaga gtgtaacagg accttggaaa ggggatgtga atcttccctg 240
cacctatgac cccctgcaag gctacaccca agtcttggtg aagtggctgg tacaacgtgg 300
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gtaccagggc cgcctgcatg tgagccacaa ggttccagga gatgtatccc tccaattgag 420
caccctggag atggatgacc ggagccacta cacgtgtgaa gtcacctggc agactcctga 480
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<210> 8
<211> 1295
<212> DNA
<213> Homo sapiens

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<210> 9
<211> 312
<212> PRT
<213> Homo sapiens

<400> 9
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            20   25   30
Lys Asp Gln Gln Val Val Thr Ala Val Glu Tyr Gln Glu Ala Ile Leu
        35   40   45
Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg Leu Glu Trp Lys
    50   55   60
Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr Gln Gln Thr Leu Gln
65   70   75   80
Gly Asp Phe Lys Asn Arg Ala Glu Met Ile Asp Phe Asn Ile Arg Ile
                85   90   95
Lys Asn Val Thr Arg Ser Asp Ala Gly Lys Tyr Arg Cys Glu Val Ser
            100   105   110
Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
        115   120   125
Glu Val Leu Val Ala Pro Ala Val Pro Ser Cys Glu Val Pro Ser Ser
    130   135   140
Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys Gln Asp Lys Glu Gly
145   150   155   160
Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp Gly Ile Arg Leu Leu
                165   170   175
Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn Ser Ser Tyr Thr Met
            180   185   190
Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr Val Ser Lys Leu Asp

```
        195                 200                 205
Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser Val Gly Tyr Arg Arg
    210                 215                 220
Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu Asn Ile Ser Gly Ile
225                 230                 235                 240
Ile Ala Ala Val Val Val Val Ala Leu Val Ile Ser Val Cys Gly Leu
                245                 250                 255
Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe Ser Lys Glu Thr Ser
            260                 265                 270
Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr Thr Met Ser Glu Asn
        275                 280                 285
Val Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp Lys Ala Ala Ala
    290                 295                 300
Gly Gly Ser Arg Gly Gln Glu Phe
305                 310


<210> 10
<211> 300
<212> PRT
<213> Mus musculus

<400> 10
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            20                  25                  30
Ala Gln Ser Asp Val Gln Val Pro Glu Asn Glu Ser Ile Lys Leu Thr
        35                  40                  45
Cys Thr Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe Val
    50                  55                  60
Gln Gly Ser Thr Thr Ala Leu Val Cys Tyr Asn Ser Gln Ile Thr Ala
65                  70                  75                  80
Pro Tyr Ala Asp Arg Val Thr Phe Ser Ser Ser Gly Ile Thr Phe Ser
                85                  90                  95
Ser Val Thr Arg Lys Asp Asn Gly Glu Tyr Thr Cys Met Val Ser Glu
            100                 105                 110
Glu Gly Gly Gln Asn Tyr Gly Glu Val Ser Ile His Leu Thr Val Leu
        115                 120                 125
Val Pro Pro Ser Lys Pro Thr Ile Ser Val Pro Ser Ser Val Thr Ile
    130                 135                 140
Gly Asn Arg Ala Val Leu Thr Cys Ser Glu His Asp Gly Ser Pro Pro
145                 150                 155                 160
Ser Glu Tyr Ser Trp Phe Lys Asp Gly Ile Ser Met Leu Thr Ala Asp
                165                 170                 175
Ala Lys Lys Thr Arg Ala Phe Met Asn Ser Ser Phe Thr Ile Asp Pro
            180                 185                 190
Lys Ser Gly Asp Leu Ile Phe Asp Pro Val Thr Ala Phe Asp Ser Gly
        195                 200                 205
Glu Tyr Tyr Cys Gln Ala Gln Asn Gly Tyr Gly Thr Ala Met Arg Ser
    210                 215                 220
Glu Ala Ala His Met Asp Ala Val Glu Leu Asn Val Gly Gly Ile Val
225                 230                 235                 240
Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Leu Leu Ile Phe Gly
                245                 250                 255
Val Trp Phe Ala Tyr Ser Arg Gly Tyr Phe Glu Thr Thr Lys Lys Gly
            260                 265                 270
Thr Ala Pro Gly Lys Lys Val Ile Tyr Ser Gln Pro Ser Thr Arg Ser
        275                 280                 285
Glu Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
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290 295 300

<210> 11
<211> 1842
<212> DNA
<213> Homo sapiens

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agctcttgtt gtggagagca tagtaaattt tcagagaact tgaagccaaa aggatttaaa 1620
accgctgctc taaagaaaag aaaactggag gctgggcgca gtggctcacg cctgtaatcc 1680
cagaggctga ggcaggcgga tcacctgagg tcgggagttc gggatcagcc tgaccaacat 1740
ggagaaaccc tactggaaat acaaagttag ccaggcatgg tggtgcatgc ctgtagtccc 1800
agctgctcag gagcctggca acaagagcaa aactccagct ca 1842

<210> 12
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 12
tcgcggagct gtgttctgtt tccc 24

<210> 13
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Hybridization Probe

<400> 13
tgatcgcgat ggggacaaag gcgcaagctc gagaggaaac tgttgtgcct 50

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 14
acacctggtt caaagatggg 20

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 15
taggaagagt tgctgaaggc acgg 24

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 16
ttgccttact caggtgctac 20

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 17
actcagcagt ggtaggaaag 20

<210> 18
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 18
tatccctcca attgagcacc ctgg 24

<210> 19
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 19
gtcggaagac atcccaacaa g 21

<210> 20
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 20
cttcacaatg tcgctgtgct gctc 24

<210> 21
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 21
agccaaatcc agcagctggc ttac 24

<210> 22
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Hybridization Probe

<400> 22
tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 23
<211> 260
<212> PRT
<213> Homo sapiens

<400> 23
Leu Ala Leu Gly Ser Val Thr Val His Ser Ser Glu Pro Glu Val Arg
1 5 10 15
Ile Pro Glu Asn Asn Pro Val Lys Leu Ser Cys Ala Tyr Ser Gly Phe
20 25 30
Ser Ser Pro Arg Val Glu Trp Lys Phe Asp Gln Gly Asp Thr Thr Arg
35 40 45
Leu Val Cys Tyr Asn Asn Lys Ile Thr Ala Ser Tyr Glu Asp Arg Val
50 55 60
Thr Phe Leu Pro Thr Gly Ile Thr Phe Lys Ser Val Thr Arg Glu Asp
65 70 75 80
Thr Gly Thr Tyr Thr Cys Met Val Ser Glu Glu Gly Gly Asn Ser Tyr
85 90 95

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Gly Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro Ser Lys Pro
            100                 105                 110
Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg Ala Val Leu
        115                 120                 125
Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr Thr Trp Phe
    130                 135                 140
Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr Arg Ala Phe
145                 150                 155                 160
Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly Glu Leu Val Phe
                165                 170                 175
Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr Ser Cys Glu Ala Arg
            180                 185                 190
Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn Ala Val Arg Met Glu Ala
        195                 200                 205
Val Glu Arg Asn Val Gly Val Ile Val Ala Ala Val Leu Val Thr Leu
    210                 215                 220
Ile Leu Leu Gly Ile Leu Val Phe Gly Ile Trp Phe Ala Tyr Ser Arg
225                 230                 235                 240
Gly His Phe Asp Arg Thr Lys Lys Gly Thr Ser Ser Lys Lys Val Ile
                245                 250                 255
Tyr Ser Gln Pro
            260
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<210> 24
<211> 270
<212> PRT
<213> Homo sapiens

<400> 24

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Val Arg Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro Gln Asp Val
 1               5                  10                  15
Leu Arg Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys Thr Tyr His
            20                  25                  30
Thr Ser Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp Lys Leu Leu
        35                  40                  45
Leu Thr His Thr Glu Arg Val Val Ile Trp Pro Phe Ser Asn Lys Asn
    50                  55                  60
Tyr Ile His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile Ser Asn Asn
65                  70                  75                  80
Ala Glu Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu Thr Met Ala
                85                  90                  95
Asp Asn Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser Asp Leu Glu
            100                 105                 110
Gly Asn Thr Lys Ser Arg Val Arg Leu Leu Val Leu Val Pro Pro Ser
        115                 120                 125
Lys Pro Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly Asn Asn Ile
    130                 135                 140
Gln Leu Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro Gln Tyr Ser
145                 150                 155                 160
Trp Lys Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro
                165                 170                 175
Ala Ser Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser
            180                 185                 190
Gly Tyr Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe Cys
        195                 200                 205
Asn Ile Thr Val Ala Val Arg Ser Pro Ser Met Asn Val Ala Leu Tyr
    210                 215                 220
Val Gly Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile Ile Gly Ile
225                 230                 235                 240
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Ile Ile Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn Thr Glu Asp
                245                 250                 255
Lys Glu Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu Pro
            260                 265                 270


<210> 25
<211> 263
<212> PRT
<213> Homo sapiens

<400> 25
Leu Cys Ser Leu Ala Leu Gly Ser Val Thr Val His Ser Ser Glu Pro
 1               5                  10                  15
Glu Val Arg Ile Pro Glu Asn Asn Pro Val Lys Leu Ser Cys Ala Tyr
            20                  25                  30
Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe Asp Gln Gly Asp
        35                  40                  45
Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr Ala Ser Tyr Glu
    50                  55                  60
Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe Lys Ser Val Thr
65                  70                  75                  80
Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser Glu Glu Gly Gly
                85                  90                  95
Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro
            100                 105                 110
Ser Lys Pro Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg
        115                 120                 125
Ala Val Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr
    130                 135                 140
Thr Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr
145                 150                 155                 160
Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly Glu
                165                 170                 175
Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr Ser Cys
            180                 185                 190
Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn Ala Val Arg
        195                 200                 205
Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val Ala Ala Val Leu
    210                 215                 220
Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly Ile Trp Phe Ala
225                 230                 235                 240
Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly Thr Ser Ser Lys
                245                 250                 255
Lys Val Ile Tyr Ser Gln Pro
            260


<210> 26
<211> 273
<212> PRT
<213> Homo sapiens

<400> 26
Leu Cys Ala Val Arg Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro
 1               5                  10                  15
Gln Asp Val Leu Arg Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys
            20                  25                  30
Thr Tyr His Thr Ser Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp
        35                  40                  45
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Lys Leu Leu Leu Thr His Thr Glu Arg Val Val Ile Trp Pro Phe Ser
    50                  55                  60
Asn Lys Asn Tyr Ile His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile
65                  70                  75                  80
Ser Asn Asn Ala Glu Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu
                85                  90                  95
Thr Met Ala Asp Asn Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser
            100                 105                 110
Asp Leu Glu Gly Asn Thr Lys Ser Arg Val Arg Leu Leu Val Leu Val
        115                 120                 125
Pro Pro Ser Lys Pro Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly
    130                 135                 140
Asn Asn Ile Gln Leu Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro
145                 150                 155                 160
Gln Tyr Ser Trp Lys Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu
                165                 170                 175
Ala Gln Pro Ala Ser Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr
            180                 185                 190
Asp Thr Ser Gly Tyr Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr
        195                 200                 205
Gln Phe Cys Asn Ile Thr Val Ala Val Arg Ser Pro Ser Met Asn Val
    210                 215                 220
Ala Leu Tyr Val Gly Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile
225                 230                 235                 240
Ile Gly Ile Ile Ile Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn
                245                 250                 255
Thr Glu Asp Lys Glu Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu
            260                 265                 270
Pro
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<210> 27
<211> 413
<212> DNA
<213> Artificial Sequence

<220>
<223> Consensus DNA Sequence

<400> 27
ctcgagccgc tcgagccgtg cggggaaata tcgttgtgaa gttagtgccc catctgagca 60
aggccaaaac ctggaagagg atacagtcac tctggaagta ttagtggctc cagcagttcc 120
atcatgtgaa gtaccctctt ctgctctgag tggaactgtg gtagagctac gatgtcaaga 180
caaagaaggg aatccagctc ctgaatacac atggtttaag gatggcatcc gtttgctaga 240
aaatcccaga cttggctccc aaagcaccaa cagctcatac acaatgaata caaaaactgg 300
aactctgcaa tttaatactg tttccaaact ggacactgga gaatattcct gtgaagcccg 360
caattctgtt ggatatcgca ggtgtcctgg ggaaacgaat gcaagtagat gat 413

<210> 28
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 28
atcgttgtga agttagtgcc cc 22

<210> 29
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Primer

<400> 29
acctgcgata tccaacagaa ttg 23

<210> 30
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Hybridization Probe

<400> 30
ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttcc 48